

Research and Practice of Art and Design Professional Course Teaching Oriented by Design Competition

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Abstract: With the continuous growth of the country's demand for innovative and multidisciplinary art and design talents, the reform of art and design education has become an important issue in the field of education. Whereas traditional teaching models place too much emphasis on theoretical knowledge and neglect the development of practical skills and innovative thinking of pupils, thereby creating a mismatch between the trained talents and the needs of society. In recent years, design competitions have been progressively used by a growing number of artistic design professionals in universities as an innovative teaching method. Students, has become the integrated promotion of quality, practical knowledge of students in such a context, we want to see how competitions among specialized courses in arts and design to explore more effective and practical teaching paths, Through competitions can stimulate creative thinking improve the practical skills and innovative abilities of students in order to bridge the gap between theory and practice in the traditional process of training talents in art design. By conducting an in-depth analysis of the environmental design program at the School of Art and Design, Wuhan Textile University, this paper attempts to introduce the model of design competitions into the curriculum, striving to build a teaching system that meets the needs of contemporary development and has practical application value. Furthermore, the study further explores the role of design competitions in enhancing students' creative abilities and analyzes how to integrate competition results with course content, promoting teaching reforms and enhancing students' overall design abilities and employability. Through this research, the aim is to provide practical evidence for the reform of art and design program curricula, thereby improving course content and teaching methods, enhancing students' innovation and practical skills, and promoting closer alignment between education and industry needs.

Keywords: Design Competitions; Art and Design Program Curriculum; Teaching Research; Teaching Practice.

1. Introduction

As China's demand for innovative and complex art and design talents continues to increase, art and design education is facing an urgent need for transformation and reform. In recent years, the state has promulgated a series of policies to support innovative education, such as the "Outline of the National Medium- and Long-Term Educational Reform and Development Plan (2010 - 2020) [1]" and the "Outline of the National Strategy for Innovation-Driven Development," which explicitly puts forward the need to improve the quality of education and cultivate high-quality and complex innovative talents in line with the needs of society. and cultivate high-quality, complex and innovative talents that meet the needs of society. In the field of art and design, the traditional education model gradually reveals the problem of disconnection with the industry demand, traditional design education focuses excessively on the teaching of theoretical knowledge, but neglects the cultivation of practical skills and innovative thinking.

In order to solve this problem, design competitions have been gradually adopted by colleges and universities as an innovative teaching mode, and have become a key way to enhance students' innovation and practical ability. Students can use what they have learned in practice by participating in design competitions, and also improve their competitiveness by taking part in actual design projects. This article discusses how to effectively integrate design competitions into the curriculum teaching of art and design majors, and explores the corresponding practical paths and modes, which provides certain theoretical support and practical guidance for the

innovation and development of art and design education.

2. Status of Research, Content, and Methodology

2.1. Research Status

In traditional art design education, the teaching focus is often put on the teaching of theoretical knowledge, which makes students lack of sufficient practice opportunities, limiting their ability to apply and innovate in actual design, and most of the students do not have solid basic skills in the profession, relatively weak software design, and not strong in the use of new technology and new equipment[2], and at the present stage, the industry's demand for art design professionals has become increasingly focused on the ability to practice and innovative thinking. At this stage, the industry's demand for art design professionals has become increasingly focused on practical ability and innovative thinking, however, many schools still emphasize on basic theory teaching in art design courses, ignoring the cultivation of students' hands-on ability and innovative thinking. To a certain extent, such an education model will make it difficult for students to adapt to the social needs after graduation, and they can't integrate into the actual social work smoothly. The "Outline of the National Medium and Long-term Educational Reform and Development Plan" clearly points out that it is necessary to strengthen the practical teaching and promote the close connection between the educational content and the development of the industry, so how to narrow the gap between the theory and practice in education, and vigorously improve the students' practical and innovative ability has

become a key issue to be solved in the current art and design education. How to narrow the gap between theory and practice in education, and vigorously improve students' ability to practice and innovation has become the key problem of art and design education.

2.2. Research Content

Since China's reform and opening up, design education has experienced unprecedented expansion along with the country's rapid economic development and society's urgent demand for professionals in the design field. The number of colleges and universities offering design majors has continued to rise, and the proportion of design disciplines in art enrollment has also increased significantly. However, the rapid expansion of design education has also brought about many problems, the education system has become complicated, the teaching quality standards have become inconsistent, and the importance of competition in education has not been realized[3]. This study focuses on the application of design competition in the teaching of art design professional courses, trying to explore the design competition as an innovative teaching method, so that it can be integrated into the art design professional course system, and promote the reform and innovation of the teaching mode.

The study analyzes the current situation of design competition in the field of art and design education, combs through the specific situation of design competition introduced into the curriculum teaching of colleges and universities at home and abroad, discusses in depth the scope of its application, implementation and teaching effect, points out the advantages and shortcomings of the design competition in the teaching, and provides theoretical support for the subsequent related research. In the field of architecture, teaching covers 8 disciplines such as environment, science, economics, political science, material science, engineering, etc.; while in the field of environmental design, it covers 8 aspects such as culture, design, environmental psychology, gardening, art, etc[4]. This thesis will focus on how the design competition can be organically integrated with the core courses of art and design majors, such as "Residential Interior Design", "Catering Space Design", "Landscape Architecture" and so on. The study analyzes in detail the curriculum content, teaching methods and practical activities of the school, focuses on how to make up for the problem of the disconnection between theory and practice in traditional art and design education, and proposes effective ways and methods of integrating design competitions into teaching. The study relies on empirical analysis to assess the actual effect of design competitions on the improvement of students' abilities, and uses data to verify the actual effectiveness of design competitions in teaching. The study hopes to build a teaching mode of art and design courses based on design competitions, to provide a theoretical basis and practical guidance for reforming the content of the school courses as well as the teaching methods, and to provide a strong support for the innovative development of art and design education.

2.3. Research Methodology

This thesis uses a combination of research methods to ensure the comprehensiveness and depth of the study. With the help of literature analysis, we systematically review the relevant literature on design competitions and art design education at home and abroad to understand the theoretical basis and development history of design competitions as a

means of teaching, analyze the application modes and effects of the design competitions in different education systems, and rely on the existing literature to summarize and build a theoretical framework for the subsequent study. By summarizing the existing literature, the theoretical framework of this study is constructed to provide support for the subsequent research.

Adopting the case study method, with the selection of successful cases at home and abroad, and the practical cases of the courses in the College of Art and Design of Wuhan Textile University, we analyze the application effect of design competitions in specific teaching and reveal the advantages and limitations of the design competitions in practical teaching, which can be interpreted in detail for the teaching practice and provide reference for the effective implementation of the design competitions.

Use questionnaire survey method and interview method to collect first-hand data. With the help of questionnaires, we investigate the real feedback of art and design students after participating in design competitions to understand their gains in the competitions and the changes in their own abilities, and with the help of interviews, we let students and teachers have in-depth exchanges, so that we can get specific experiences and opinions about the application of design competitions, and enrich the data of the study.

The empirical research method is used to assess the effect of design competitions on the improvement of students' abilities, with the help of comparing the changes in students' abilities before and after, assessing the changes in their creative thinking, problem-solving ability, teamwork ability and so on before and after their participation in design competitions, providing reliable data support for the study.

Research methodology				
	Bibliographic analysis	Case-study method	Questionnaire/ interview method	Empirical research methods
Step 1	Review of relevant literature	Find cases	Designing the questionnaire	Comparison of results before and after
Step 2	Understanding the Foundation/History	In-depth analysis	Have an in-depth conversation	Assessment capacity
Step 3	Analyzing Effects	Advantage/limitations	Genuine feedback	Finding change
Step 4	Literature summary	Research data	Research data	Research data

Figure 1. Research methodology

3. Importance of Design Competitions Applied to the Teaching of Art and Design.

3.1. Promoting Students' Creative and Practical Skills

In the cultivation system of art and design majors, the grasp of creative ability and practical skills is the key starting point to measure the comprehensive quality of students, although the theoretical learning for students to lay the necessary knowledge foundation, but if the lack of practice refinement, most of the time they are difficult to form the ability to think independently, and in the complexity of the reality of the situation of the creative solution to some professional problems will be more dangerous, schools should design their curriculum around event competition[5], design competition

is precisely the key channel to make up for this deficiency, which is oriented to give students a specific task to complete the whole process from creative conception to program deepening and finally to technical realization and final presentation. Design competition is the key channel to make up for this shortcoming, which is oriented to give students specific tasks and let them complete the whole process from creative conception to program deepening, and finally to technical realization and final presentation within the specified time. In this process, students can stimulate their own creative potential, but also in the practical training to continue to improve the professionalism of design.

Creation and design is a long process, we can find that creativity does not appear out of nowhere, but in the process of thinking, exploring and trial and error slowly formed, design competitions to bring the challenge and pressure, in turn, can motivate students to break through the inertia of the thinking, inspired by a more unique ideas. Take the “red dot design award” as an example, this competition encourages participants to try to innovate within the existing design framework to explore new possibilities, German design scholar Peter Zaltzman once said: “Innovation is not the result of closed-door work, but rather emphasizes that people have to keep experimenting, adjusting and making breakthroughs in practice to obtain the results,” which is exactly the embodiment of the value of the design competition, prompting students to try to continuously optimize the design way of thinking in the process of solving the real problems and enhancing their creativity.

3.2. Promoting the Reform of the Teaching Model in Line with the Industry

Traditional art and design education often focuses on the explanation of theoretical knowledge and the training of classroom assignments, but it is particularly weak in the practical aspects, especially the interface with social needs. Introducing design competitions into teaching provides a new direction for the innovation of teaching mode. In recent years, many colleges and universities have begun to integrate the competition into the curriculum system, forming a “competition-driven teaching” mode, which allows students to participate in actual competitions while teaching in the classroom, so that they can learn in a more targeted manner. Actual cases show that the Massachusetts Institute of Technology (MIT) D-Lab program will be incorporated into the teaching content of the competition, and also encourages students to participate in international design competitions, was awarded the first prize of the MIT “Social Innovation Design Competition” design works, and ultimately introduced into some parts of Africa, to achieve the real from the classroom knowledge to the value of the community. The real transformation from classroom knowledge to social value has been realized.

Incorporating design competitions into the teaching mode can create an opportunity for students to have direct contact with the industry. Many international design competitions are sponsored by famous enterprises or industry organizations, and if they win the competitions, the winners will get certain professional recognition, and may have the opportunity to be noticed by enterprises, and may even enter the related industries directly. “In the 2022 iF design award competition, a team of students from Jiangnan University proposed a conceptual plan for an “intelligent kitchen system”, which was favored by Huawei and eventually entered the product

incubation stage. This shows that design competitions provide a platform to display abilities, and this platform has also become a key channel for enterprises to discover and cultivate excellent design talents.

The introduction of competitions in art and design teaching can supplement the traditional teaching mode, but also promote the modernization of education, with the help of these design competitions, students can exercise their innovative thinking and practical skills in a real-world environment, and continue to grow in the competition. This model can course content closely match the needs of industry development, but also provide students with more opportunities to enter the workplace, in this era of fierce competition, design competitions is a challenge, is an opportunity for growth, for each art and design students to seize this opportunity to break through and find a door to the future of design.

4. Competition-oriented Design Practice Course Construction and Implementation Strategies

4.1. Analysis of the Principles and Modalities of Curriculum Development

Design competition is increasingly becoming a key part of the teaching of art and design majors, when building competition-oriented design practice courses, we should pay attention to the curriculum to meet the basic requirements of the national academic training, to meet the actual needs of the curriculum and the development of the industry is closely linked to the curriculum should be in accordance with the core principles of practice-oriented, innovation-driven, teamwork, and the industry docking, etc., so that the students can comprehensively exercise their own professional ability in the competition environment The curriculum should follow the core principles of practice orientation, teamwork and industry connection, so that students can exercise their professional abilities in a comprehensive way in the competition environment and enhance their innovative consciousness.

4.1.1. The Principle of Practice Orientation

The principle of practice-oriented highlights that the key to design competitions is to enhance students' practical application ability, according to which the course should be carried out around the real design tasks, unlike traditional courses focusing on theoretical lectures, the practice-oriented teaching mode pays more attention to the students' practical operation ability, in the process, the students have to analyze and solve the specific design problems, and also to ensure that the results of their design have feasibility and application value. Incorporating design competitions can make the course simulate real competition projects, prompting students to refine their professional skills in practice.

Courses can be combined with a variety of practical teaching forms, classroom simulation competitions, let students participate in design projects carried out in cooperation with enterprises, or relevant professional internships, these forms of teaching can allow students to accumulate experience in different practical scenarios, but also to improve their ability to solve complex problems. Although the design attaches importance to the presentation of the final results, it should pay more attention to the systematic thinking and creative logic in the process, so it can be seen that the design course should focus on cultivating the

comprehensive ability of the students, including demand analysis, market research, program conceptualization, prototyping, testing and optimization, etc., and with the help of the practice-oriented teaching mode, it can help the students to form a more rigorous design thinking, so that the students are more adapted to the competitiveness of the industry development.

4.1.2. Innovation-driven Principles

Integrate the innovation-driven principle into the design competition, focusing on highlighting the creativity of the design and breakthroughs, which requires students to try to boldly get rid of the constraints of the traditional design methods when solving design problems, and bravely try new ideas and technologies, the principle of stimulating the creativity of the students, so that they can continue to explore the process of design, breakthroughs in the design process, and learn to use new materials and technologies, so as to The principle is to stimulate students' creativity so that they can continue to explore and breakthrough in the design process and learn to utilize new materials and technologies, thus enhancing their own innovation ability.

The achievement of design innovation attaches importance to the design itself and the cross-fertilization of multidisciplinary knowledge. During the teaching period, teachers should encourage students to expand the scope of knowledge, combine the theories and methods of different disciplines, encourage students to actively learn and use cutting-edge technologies, enhance their technological innovation ability, and guide students to use brainstorming, design thinking and other ways to help them form a systematic design thinking. With the help of applying this principle, students' understanding of design innovation is improved and their ability to adapt to future design trends is enhanced.

4.1.3. Principles of Teamwork

The principle of teamwork emphasizes that design competitions are generally carried out in the form of teamwork, which requires students to have professional skills and good teamwork ability, teamwork encompasses the division of tasks, communication and coordination, project management, and interdisciplinary cooperation and other aspects of the ability to modern design practice, complex design problems most often require different areas of professional knowledge, in the design of the curriculum, should create more interdisciplinary cooperation opportunities for students so that they can work with students from different backgrounds to complete the project. In modern design practice, complex design problems often require different areas of expertise, and in course design, more opportunities for interdisciplinary collaboration should be created for students to work on projects with classmates from different backgrounds. The most critical aspect of teamwork is effective communication, in order to enhance students' communication skills, the course can rely on the setting of team discussions, design program display and other links, so that students in the exchange of logical thinking, improve collaboration efficiency, design competitions are generally more time-sensitive, complex and time-critical tasks, students also need to have a certain degree of project management skills, the course can be set up with the help of the project schedule, task allocation mechanism and regular checking system, to help students learn to rationalize and improve the quality of design. The course can help students learn to plan their time reasonably, manage their team effectively and

ensure the smooth progress of the project by setting up a project schedule, task allocation mechanism and regular checking system. In the process of teamwork, disagreements and conflicts are unavoidable. Teachers should guide students to actively communicate and coordinate with each other to solve problems, and cultivate their teamwork and decision-making abilities under pressure.

4.1.4. Principle of Industry Alignment

The principle of industry integration emphasizes that design competitions are generally carried out in close accordance with the needs of the industry, in the course design, should be fully integrated with the current industry trends, so as to ensure that the students' design works can meet the actual needs of the market and society. Realistic design environments provide a practical platform for students to adapt to the challenges of their future careers to a certain extent in advance[6]. in the course, industry experts, senior designers or corporate executives can be invited to participate in the teaching process, with the help of thematic lectures, case studies, etc., to teach the students cutting-edge Industry experience. The course design should be centered on actual industry problems as much as possible, and when teachers assign design tasks, they should guide students to pay attention to the hot topics in society and pain points in the industry, and encourage them to put forward innovative and feasible design solutions to improve the realistic value of their works.

4.2. Curriculum Implementation Strategies

The curriculum system of China's art and design majors generally follows the model of "basic theory + practical training", i.e., the early courses focus more on basic design theory, art history, material application and other knowledge, while the later courses gradually introduce actual projects and comprehensive design courses. Take the environmental design program as an example, its courses cover architectural space design, landscape planning, urban renewal, ecological sustainable design and other directions, requiring students to master the core skills of drawing, modeling, computer-aided design, etc., and to enhance their professional competence through graduation design and internship practice.

4.2.1. Task-driven Teaching, Classroom Competition Linkage Mechanism

Task-driven teaching is to guide students to carry out learning and design by formulating specific tasks for competitions to ensure that students transform theoretical knowledge into practical ability. This approach helps students to better understand design theory and improve their ability to solve complex problems.

At the beginning of the course, the teacher needs to select the design competition tasks that are relevant to the students and that they are likely to participate in the future, and then subdivide the whole design task into multiple phases, with clear objectives for each phase, of which the first phase is to carry out a research on the market and analyze the needs of the population, the second phase is to sketch the design and the initial idea of the program, the third phase is to make the original model, and the fourth phase is to make a presentation and report. The fourth stage is the presentation and debriefing. At the end of each stage, students need to submit their own results to receive comments from teachers and classmates, relying on such a way to break down the task, students can gradually understand the complete process of design, and constantly improve their own work.

The environmental art design profession has significant practice-oriented characteristics, while the traditional teaching method centered on theoretical lectures often exists monotonous content, single form and so on[7]. In order to help students adapt to the pace and pressure of the actual competition, teachers can arrange simulated competitions in the classroom to build up a real competition linkage mechanism, so that students can complete the whole process from creative conception to program presentation within the time limit. This kind of high-intensity training can improve students' stress resistance and time management ability, and encourage them to accumulate experience in the process of practice, so that they can be fully prepared for the official competition.

4.2.2. Flipped Classroom Teaching, Team Project-Based Learning Mechanism

The flipped classroom model focuses on allowing students to learn the basics outside the classroom, while the classroom time is dedicated to practice, discussion, and problem solving. In the flipped classroom model, students are required to do extracurricular preparation on an online learning platform, and the teacher provides a series of teaching videos, reading materials, and online lectures to help students master the basics of design software use and design theory. With this kind of out-of-class learning, students can more fully utilize their classroom time and focus on the practical operation of learning design. After class, students can communicate with the instructor and classmates to ask questions and work together to solve problems encountered during the learning process.

In the classroom, allow students to be creative and imaginative in an open-ended teaching environment[8], students will be divided into different groups to carry out teamwork to complete the design tasks, and the role of the teacher in the classroom changes to become a guide, giving technical and methodological support, in this mode, students can more actively participate in the design practice, give full play to their own creativity, and solve more design problems.

4.2.3. Digital Tools for Teaching and Learning, Mechanisms for Future Competition Laboratories

With the continuous development of modern science and technology, digital design tools have become an indispensable part of modern design, in design competitions, students' creative design needs to rely on digital ways to express and verify, in the curriculum, teachers should give students systematic training in digital tools, so that students can learn how to use CAD software to carry out architectural design, how to carry out 3D modeling software to carry out Students should learn how to use CAD software to carry out architectural design, how to use 3D modeling software to carry out product styling design, and master rendering software to enhance the visual effect of the work. The curriculum should also introduce advanced technologies such as virtual reality (VR), augmented reality (AR), and 3D printing to help students understand and utilize advanced design tools, implementation of virtual environment design and simulation experiments [9].

Schools can set up special competition laboratories equipped with high-performance computers, 3D printers, virtual reality equipment and other advanced hardware so that students can carry out digital design and experimentation. The differences in the tools used by each major also provide students with opportunities for interdisciplinary collaboration, which indirectly assists them in carrying out project research

with their peers in other majors to develop a more integrated design practice.

4.2.4. Competition Stage Assessment Teaching, Competition Review Workshop Mechanism

In order to improve students' competition level and design ability, colleges and universities may also organize internal professional competitions on their own initiative, depending on the level of the students[10], the course assigns competition tasks to carry out stage assessment teaching, organizes review workshops after the competition to help students summarize their experiences and analyze the reasons for success and failure. During the competition stage, teachers need to regularly conduct stage assessment of students, pay attention to the completion of students' design solutions, and pay attention to their thinking, problem solving ability and teamwork in the design process. Teachers based on the assessment results to give students feedback[11], adjust their design ideas and improve the program.

After the competition, teachers should organize a review workshop so that students can summarize the whole design competition process. The review workshop focuses on reviewing the decision-making difficulties, design pain points, creative breakthroughs, etc., analyzing the reasons for the success or failure of the competition, and discussing the gains and losses of the design process by means of case studies and collective discussions, so that students can learn from their experiences and improve their design thinking. The review process is conducive to improving students' self-reflection ability and building a solid foundation for their future competitions.

5. Conclusion

This study centers on the theme of "research and practice of design competition-oriented art design professional curriculum teaching", and explores the key role of design competition in art design education in colleges and universities. After systematic research, it is found that the integration of design competition into the curriculum teaching can enhance students' innovative thinking, practical ability, and teamwork, and promote the close connection between the teaching content and the actual needs of the industry. After systematic research, it is found that integrating design competitions into curriculum teaching can enhance students' innovative thinking, practical ability and teamwork level, and promote the close connection between teaching content and the actual needs of the industry. These principles provide a solid theoretical support for the design and implementation of competition-oriented courses, and in practice, a set of effective teaching strategies are explored, with the help of task-driven teaching to stimulate students' initiative, the use of flipped classroom and team project learning to strengthen the practical ability, the use of digital tools to enhance the teaching efficiency, and the establishment of the competition stage evaluation and review mechanism to form a complete teaching closed loop.

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